
VEHICLE MANUFACTURER NOTICE LETTER

Date: May 12, 2015

Subject: VAPOR BUS INTERNATIONAL VOLUNTARY SAFETY RECALL

Reference: National Highway Traffic Safety Administration ("NHTSA") Campaign ID: 15E033

This notice is sent to you in accordance with the requirements of the National Traffic and Motor Vehicle Safety Act.

Vapor Bus International has decided that a software defect which relates to motor vehicle safety exists in certain transit buses produced that are configured with Vapor electric transit door operator control modules. Under certain operating conditions, there is a risk that the rear passenger doors can open while the bus accelerates from a stopped position without proper annunciation of the door open state to the bus' brake interlock control system.

Cause of Defect:

The cause of this defect is related to an error in the ETO Controller Assembly software.

Description of Defect:

During the passenger door closing cycle a "door closed" limit switch is activated and the ETO Controller Assembly issues a "door closed" status to the bus multiplex system. Once "door closed" status is issued, the ETO Controller Assembly enters a "door closed pre-load" state and commands the door operator to drive the doors firmly closed against the portal seals. The duration of the door closed pre-load state is approximately 400 milliseconds.

On some buses, the driver can begin to accelerate from a full stop as soon as "door closed" status is provided by the ETO Controller Assembly. If the driver issues a door open command while the bus speed is below three miles per hour, the ETO Controller Assembly will revert to a "door recycle open" state and the doors will commence to open. Vapor has come to understand that some drivers on some vehicles will intentionally place the door controller into a "Rear Door Open" position immediately after leaving a stop to initiate an automatic braking and door opening sequence for the next stop. If the ETO Controller Assembly is in the "door closed preload" state when it

receives the request to open doors, the ETO Controller Assembly will not provide indication to the bus multiplex system of a change in “door closed” status upon deactivation of the “door closed” limit switch which occurs at the onset of the door opening sequence. The doors, therefore, continue to open as long as the bus is below three miles per hour without the application of brake interlocks. If this occurs, the bus can continue to accelerate with the doors in an open state increasing the potential for passenger injury under certain conditions.

As soon as bus speed exceeds three miles per hour with the doors in an open state, the ETO Controller Assembly issues a fault to the bus multiplex system indicating that the doors are not closed. The bus multiplex system will then alert the driver that the door is open via a dash warning light and or audible alarm.

Precautions and Preventive Measures:

Until the recall has been performed, it is very important that vehicle operators do not place their driver’s door controller in the “Rear Door Open” position immediately after the doors have closed and the bus is in motion. A full brake application after door closure prior to applying accelerator is also recommended.

It is the vehicle manufacturer’s responsibility to notify NHTSA independently if the company determines that this defect applies to vehicles sold by the company to end users, and to notify the end users of the recall and to provide the remedy to them. Vapor Bus International has supplied NHTSA with a list of bus manufacturers producing vehicles configured with Vapor electric transit door operator control modules.

Remedy:

Vapor Bus International will work with the bus manufacturer to update the ETO Controller Assembly software on all affected units free of charge. The updated version of software will provide door closed status to the bus multiplex system as soon as it transitions from the “door closed pre-load” to “door recycle open” state. All ETO Controller Assemblies that receive the updated software will be identified with a label affixed to the ETO Controller enclosure that indicates the new software revision level (see Figure 1).

NOTE: It is a violation of federal law for a manufacturer to deliver a new motor vehicle or any new or used item of motor vehicle equipment covered by this notice under a sale or lease until the defect has been remedied.

NEW
SOFTWARE
REVISION
LABEL
"V3.XXX"
WILL BE
APPLIED IN
THIS AREA
(NOTE:
SOFTWARE
VERSION IS
PART NUMBER
SPECIFIC)

UNIT PART
NUMBER

UNIT SERIAL
NUMBER

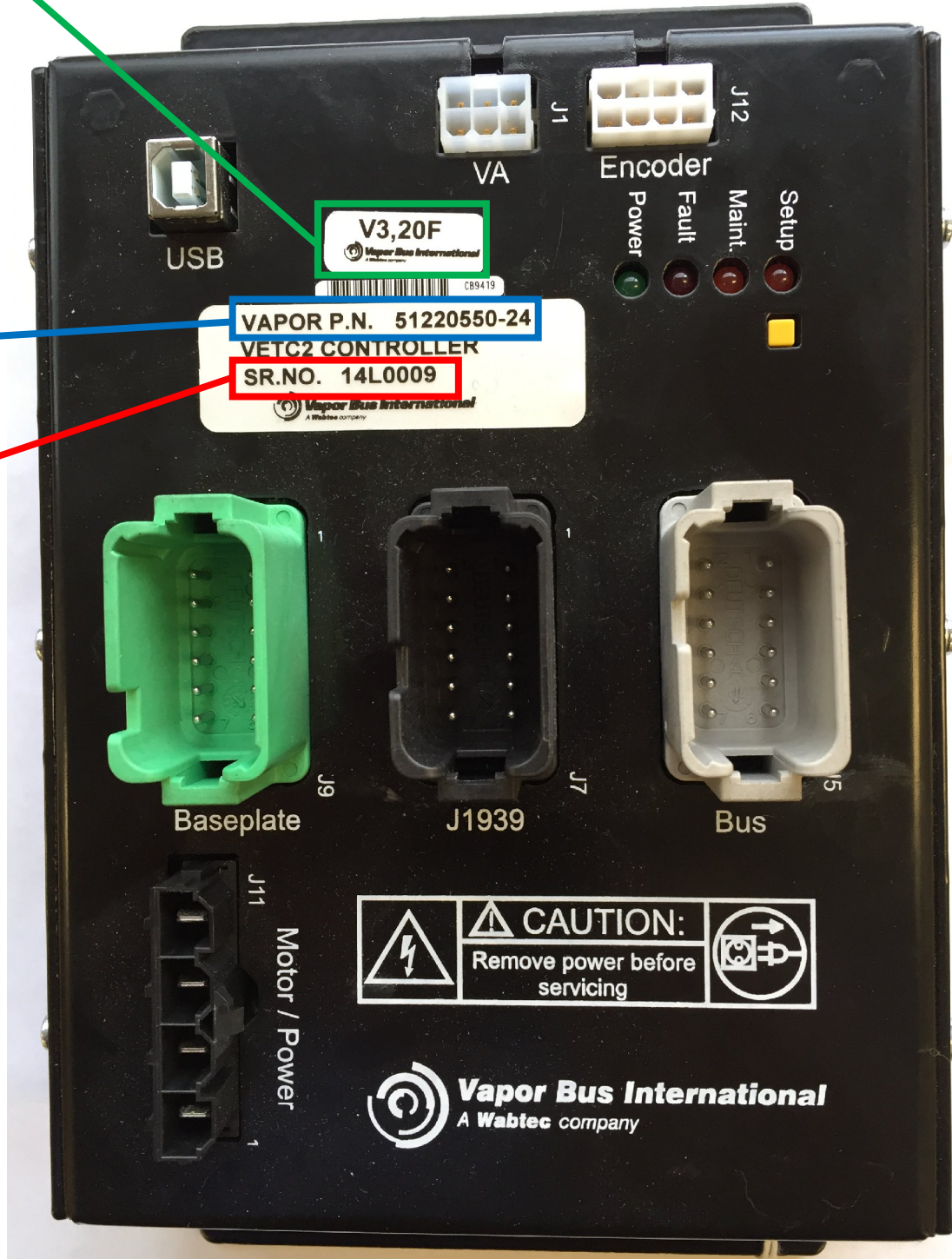


Figure 1 - ETO Controller Assembly Labeling

Units Covered by This Recall:

VBI ETO Controller Assembly part numbers 51220550-00 through 51220550-30 manufactured prior to May 1, 2015 are covered by this recall. The corresponding serial numbers for these units are as follows:

<i>Year of Manufacture</i>	<i>Start Serial Number</i>	<i>End Serial Number</i>
2015	15A0000	15D9999
2014	14A0000	14L9999
2013	13A0000	13L9999

Note: the first two digits of the serial number denote the year. The letter following the first two digits denotes the month of manufacture (e.g. “A” for January, “B” for February etc.). The four digits following the letter denote the unit sequence number in production.

Modification Instructions and Documentation:

The following Field Modification Instructions, Bulletins and Drawings are attachments to this recall notice:

- a) **Field Modification Instruction FMI-15-039*** - VBI will work with all relevant Bus Manufacturers to identify the specific vehicle operators, locations and quantities of vehicles that will require the firmware upgrade. VBI will prepare a Field Modification Instruction (“FMI”) that outlines the steps required to update the firmware for each vehicle operator. Each FMI will be identified with a specific alphanumeric numbering sequence (e.g. *FMI-15-039A*; *FMI-15-039B*; *FMI-15-039C*; etc.). A vehicle tracking list will be included with each FMI to record the bus numbers, ETO controller part numbers and serial numbers that receive the firmware upgrade (reference exemplar FMI document: FMI-15-039* attached).
- b) **VBI Bulletin No. TB08-03-366** - ETO FMI Firmware Update Procedure.
- c) **ETO Controller Assembly Drawing No. 51220550**